Having thus described the preferred embodiments, the invention is now claimed to be:

1. A hemming apparatus for hemming an outer skin and inner panel together, the apparatus comprising:

an anvil for supporting an associated assembly comprising an outer skin and an inner panel;

an upper body; and

a steel mounted to the upper body for movement between first and second operative positions, the steel having a first angled surface for prehemming the assembly when the steel is in the first operative position and a second angled surface for full-hemming the assembly when the steel is in the second operative position.

2. The apparatus of claim 1 wherein the anvil has a horizontal supporting surface and a sloped side for contacting and moving the steel from the first operative position to the second operative position.

3. The apparatus of claim 2 wherein the first angled surface of the steel is defined at substantially the same angle as the sloped side of the anvil.

4. The apparatus of claim 3 wherein the second angled surface of the steel is defined to lie parallel to the horizontal supporting surface of the anvil when the steel is in its second operative position.

5. The apparatus of claim 1 further comprising:

a cam fixedly secured adjacent the anvil; and

a cam roller operatively secured to the steel, the cam roller engaging the cam and moving the steel from

the first operative position to the second operative position when the steel is moved adjacent the anvil.

6. The apparatus of claim 1 wherein the steel is mounted within a curved recess of the upper body and held against an extended portion of the upper body when the steel is in the first operative position.

7. The apparatus of claim 1 further comprising:

a bias means for urging the steel to the first operative position.

8. The apparatus of claim 7 wherein the bias means is a spring.

9. The apparatus of claim 1 wherein the steel includes an indented radius along an intersecting edge of the first and second angled surfaces, the radius providing clearance between the steel and the assembly when the steel transitions from the first to the second operative position.

10. The apparatus of claim 1 wherein an adhesive is applied between the outer skin and the inner panel for enhancing the integrity of the hem.

11. A hemming apparatus for hemming panels together, the apparatus comprising:

an anvil including a support surface adapted for supporting an assembly that includes first and second adjacent panels to be hemmed, the first panel including a peripheral flange projecting away from the anvil support surface and the second panel including a peripheral edge

place adjacent the flange;

an upper body, at least one of said anvil and said upper body movable toward the other;

a hemming steel connected to the upper body and adapted for movement between first and second operative positions, the hemming steel defining a prehemming surface and a hemming surface angled at respective first and second angles relative to the anvil support surface whereby, upon movement of the upper body and the anvil together, the prehemming steel surface contacts and deforms the flange, and upon continued movement of the upper body and anvil together the steel moves to the second operative position so that the second, full-hemming surface engages the deformed flange and moves the deformed flange into close abutment with the second panel.

12. The apparatus of claim 11 further comprising:

a bias means for urging the steel to the first operative position.

13. The apparatus of claim 12 wherein the bias means is a spring.

14. The apparatus of claim 11 wherein the anvil includes a sloped surface adjacent the support surface for contacting and moving the steel from the first operative position to the second operative position when the anvil and the upper body move together.

15. The apparatus of claim 11 wherein the steel is pivotally connected to the upper body and adapted to pivot between the first and second operative positions.

16. The apparatus of claim 15 wherein the steel is forced to pivot from the first position to the second position when the steel engages the sloped surface of the anvil.

17. The apparatus of claim 11 wherein an adhesive is applied between the peripheral flange and the peripheral edge prior to full-hemming.

18. A method for hemming an outer skin and inner panel together, the method comprising the steps of:

placing an assembly on a supporting surface of an anvil, the assembly comprising an inner panel positioned on an outer skin, the inner panel having a peripheral edge and the outer skin having a peripheral flange;

moving a hemming steel, while in a first operative position, in a first direction into the peripheral flange of the outer skin so that an angled prehemming surface of the steel deforms the flange toward the inner panel thereby prehemming the assembly;

moving the hemming steel to a second operative position and moving the hemming steel further in the first direction into the deformed peripheral flange so that a hemming surface of the steel engages the deformed flange and moves it into close contact with the inner panel thereby full-hemming the assembly.

moving the steel away from the hemmed assembly; and

removing the finished assembly from the supporting surface.

19. The method of claim 18 wherein the peripheral flange of the outer panel is upstanding and the

peripheral edge of the inner panel is flat, both relative to the supporting surface and prior to any contact by the steel.

20. The method of claim 18 wherein the anvil includes a sloped surface for engaging the steel and causing the steel to move from the first operative position to the second operative position when the steel is moved in the first direction after prehemming.

21. The method of claim 18 further comprising:

applying an adhesive to at least one of the inner panel and the outer skin the region of the peripheral edge and the peripheral flange, respectively.

22. The method of claim 20 wherein the prehemming occurs substantially simultaneously with the steel engaging the sloped side of the anvil.

23. The method of claim 18 wherein movement of the steel from the first operative position to a second operative position is completed during a single stroke of the steel in the first direction.

24. The method of claim 23 wherein the single stroke is continuous and uninterrupted.

25. A hemming method comprising:

providing a first sheet metal panel including a first surface and an upturned flange that projects outwardly away from the first surface;

placing a second surface of a second sheet metal panel in abutment with the first surface, with an edge of

the second sheet metal panel adjacent the upturned flange, the first and second sheet metal panels together defining a sheet metal assembly;

supporting the assembly on a support surface;

providing a hemming tool with a prehemming surface inclined at a first angle relative to the support surface and a full-hemming surface inclined at a second angle relative the support surface;

moving the hemming tool in a first direction to a prehemming location so that the prehemming surface of the tool contacts and deforms the flange toward the first and second sheet metal panels;

moving the hemming tool angularly relative to the support surface so that the full-hemming surface of the hemming tool is operatively positioned relative to the deformed flange; and

moving the hemming tool from the prehemming location further in the first direction to a full-hemming position so that the full-hemming surface of the hemming tool contacts and moves the deformed flange into close abutment and wrapping engagement with the second sheet metal panel.

26. The hemming method of claim 25 wherein the steps of moving the hemming tool in the first direction to the prehemming location and moving the hemming tool in the first direction to a full-hemming location are effected by a single movement of the hemming tool in the first direction.

27. The hemming method of claim 25 wherein the step of moving the hemming tool angularly results from the step of moving the hemming tool in the first direction from

the prehemming location to the full-hemming location when the hemming tool contacts and engages at least one of the support surface and a fixed member adjacent the support surface.

28. A method for hemming an outer skin and inner panel of a motor vehicle assembly together, the method comprising the steps of:

placing an assembly on a supporting surface of an anvil, the assembly comprising an inner panel positioned on the an outer skin, the inner panel having a peripheral edge and the outer skin having a peripheral flange;

moving a steel in a single stroke into the peripheral flange of the outer skin and the peripheral edge of the inner panel thereby hemming the assembly, the steel having a first angled surface for effecting a prehem and a second angled surface for effecting a full-hem, wherein the steel moves from a first prehem position to a second full-hem position during the single stroke to align the first and second angled surfaces with the assembly sequentially;

removing the steel from the hemmed assembly; and

removing the finished assembly from the supporting surface.